

**Translation**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>JST-120-PCT</b>	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. <b>PCT/JP2004/009911</b>	International filing date (day/month/year) <b>12.07.2004</b>	Priority date (day/month/year) <b>16.07.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>G01N13/16, G12B21/08</b>		
Applicant <b>JAPAN SCIENCE AND TECHNOLOGY AGENCY ET AL</b>		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>1</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>	
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>	
Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/009911

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language \_\_\_\_\_ which is the language of a translation furnished for the purposes of:

- ☐ international search (Rule 12.3 and 23.1(b))  
☐ publication of the international application (Rule 12.4)  
☐ international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

☐ the international application as originally filed/furnished

☒ the description:

pages 1-11 as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☒ the claims:

nos. 2, 4-7 as originally filed/furnished

nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19

nos.\* 1 received by this Authority on 30.03.2005

nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☒ the drawings:

sheets 1-11 as originally filed/furnished

sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

☐ the description, pages \_\_\_\_\_

☒ the claims, nos. 3

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (*specify*): \_\_\_\_\_

☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages \_\_\_\_\_

☐ the claims, nos. \_\_\_\_\_

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (*specify*): \_\_\_\_\_

☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	<u>1, 2, 4-7</u>	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	<u>1, 2, 4-7</u>	NO
Industrial applicability (IA)	Claims	<u>1, 2, 4-7</u>	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
Document 1: JP 8-320326 A (Nikon Corp.), 3 December 1996; entire text and all drawings			
Document 2: JP 10-307144 A (Olympus Corp.), 17 November 1998; entire text and all drawings			
Document 5: JP 2000-168755 A (Tokyo Seimitsu Co., Ltd.), 14 June 2002; paragraph [0017] and fig. 6			
Document 6: JP 2000-206126 A (Hitachi, Ltd.), 28 July 2000; paragraph [0013] and fig. 3			
<p>Document 1 (see, for example, Fig. 2), discloses a scanning probe microscope probe which is equipped with a probe base part, and a supporting cantilever extending horizontally from the base part, and a measuring cantilever at the end of the supporting cantilever.</p> <p>Document 2 discloses a scanning probe microscope probe which is equipped with a probe base part (second support part (26)), and a supporting member (first supporting member (24)), and a measuring cantilever at the end of the supporting member (cantilever (20)).</p> <p>Document 2 also discloses features such as single silicon crystal and joining; it also discloses features relating to the cantilever, such as a length of 50 micrometers and a thickness of 1 micrometer or less and making</p>			

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

it short in length and thin in width, and precisely stipulating the length, and discloses features relating to the supporting member such engineering to give it an inclined surface.

Newly cited document 5 discloses a scanning probe microscope probe which is equipped with a probe base part (the thick portion of the cantilever holder (7)), and a supporting member (the thin portion close to the end of the cantilever holder (7)), and a measuring cantilever at the end of the supporting member (cantilever (6)), and the end of the aforementioned supporting member is engineered to give an inclined surface.

In addition, cantilevers with a length of 20 micrometers or less are well known in the art, as disclosed in newly cited document 6.

Since the invention disclosed in document 1 and the inventions disclosed in documents 2, 5 and 6 relate to a common field of scanning probe microscopes, application of the art disclosed in documents 2, 5 and 6 in a scanning probe microscope probe disclosed in document 1 to constitute the inventions set forth in claims 1, 2 and 5 is obvious to a person skilled in the art.

Claim 4

Document 1:

Document 2:

Document 3: JP 10-311843 A (Nikon Corp.), 24 November 1998; entire text and all drawings

Document 5:

Document 6:

Document 3 discloses a scanning probe microscope

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probe, and discloses features such as making the  
cantilever thin

Stipulating the length disclosed in document 2 for  
the thin part of the cantilever disclosed in document 3  
is obvious to a person skilled in the art.

Claims 6 and 7

Document 1:

Document 2:

Document 4: JP 2002-5810 A (Canon Corp.), 9 January  
2002; entire text and all drawings

Document 5:

Document 6:

Document 4 discloses a process for fabricating a  
scanning probe microscope probe, and discloses features  
such as joining the SOI substrate, removing the handle  
wafer and buried oxide film, and wet etching.